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December 9th, 2005

Mr. Nabil S. Fayoumi
U. S. EPA - Region 5
77 West Jackson Boulevard (SR-6J)
Chicago, Illinois 60604-3590

Re: Sauget Sites Area I - January 21, 1999 Administrative Order by Consent (AOC) Monthly Report November 1 – November 30, 2005

Dear Mr. Fayoumi,

Enclosed is the Sauget Sites Area I Monthly Report for the November 2005 reporting period. This submittal is in fulfillment of the monthly requirements of Section 2.4 Reporting, of the January 21, 1999 Final Administrative Order by Consent for Sauget Sites Area I, Sauget and Cahokia, Illinois.

Sincerely,

Steven D. Smith
Project Coordinator

cc: Kevin Turner – USEPA
Tim Gouger - USACE
Sandra Bron - IEPA
Dave Webb - IDPH
Mike Coffey - USF&W
Richard Williams - Solutia
Cathleen Bumb - Solutia
Mayor Frank Bergman - Cahokia, IL
Village of Sauget - c/o P. H. Weis & Associates (Attn: Brian Nelson)
Mayor R. Sauget - Sauget, IL
L. Glen Kurowski - Monsanto
Linda Tape - Husch & Eppenberger

Sauget Sites Area I - Sauget, Illinois

AOC - EECA / RIFS

Status Report

Date of Report: December 10, 2005
Period Covered: November 1, 2005 - November 30, 2005

Work Performed during the Reporting Period

DNAPL Investigation

The final DNAPL Investigation Work Plan was submitted to the Agencies on April 20, 2004. Field work began on May 10, 2004 and was completed on October 30, 2004. A report was prepared that summarized the results of the investigation. The report was submitted to the Agency as scheduled on January 21, 2005.

Comments on the report were received from the Agency on March 25, 2005. Those comments were reviewed and were discussed at a meeting held on May 3rd. Based on the discussion at that meeting, it was agreed that the responses to the comments would be submitted on May 27th, as opposed to the originally scheduled date of May 6th. The responses were submitted as scheduled.

A meeting was held on July 20th to discuss the Agency's review of these comments. At that meeting, it was agreed that additional DNAPL investigations are warranted and that these investigations would include:

- Review of the previous risk assessments for the potential pathway of soil vapors migrating to indoor air;
- An additional round of surveys in the existing DNAPL wells;
- Installation of a new DNAPL well adjacent to BR-I on Site I;
- Conducting video and downhole geophysical surveys of BR-I to evaluate the well and casing integrity;
- Abandonment of BR-I if the downhole survey indicates that the integrity of the well is jeopardized.

- An additional DNAPL survey in the newly installed well. Well BR-I will also be surveyed for DNAPL if the downhole inspection shows that the well integrity appears satisfactory.

A brief Work Plan summarizing the scope and methodology of these additional investigations was submitted to the Agency on August 2, 2005 and was approved on September 6th. The additional investigations began on September 16th and the following activities had been completed by the end of the reporting period:

- Surveying all of the wells installed during the initial DNAPL investigation, as well as bedrock wells BR-I and BR-G, shallow well EE-11 at Site G (for LNAPL), and three bedrock wells at the W. G. Krummrich Plant;

- Development, cleaning, and downhole geophysical testing in BR-I to investigate the condition of the casing seal in the bedrock and the quality of the bedrock;

- Installation of a new bedrock well immediately adjacent to BR-I;

- Development of this new well and an initial survey for the presence of DNAPL in the bottom of the well;

- DNAPL recovery tests on BR-I using air lift techniques.

Some evidence of minor amounts of DNAPL was detected in BR-G at Site G and in one of the wells at the Krummrich Plant (DNAPL-K-4); however, there was insufficient product to recover in either well. Recoverable quantities of LNAPL were found in well EE-11 and approximately one quart of product was recovered for analyses. Similarly, recoverable quantities of DNAPL were detected in BR-I and approximately 6 inches of product were measured in the bottom of the newly installed well immediately adjacent to BR-I (AA-19).

Ongoing monitoring of the DNAPL level in BR-I and AA-19 suggests that the recovery rate of BR-I is slow. This will be confirmed by continued monitoring and a follow-up DNAPL survey of these two wells during the next reporting period. At a meeting held on October 20th (see below), it was agreed that BR-I will be kept open for some time to allow measurement of the recharge rates.

EE/CA and RI/FS Report

The letter from the Agency with comments on the DNAPL investigation report also included comments that related to finalization of the draft EE/CA and RI/FS report, as revised by the Agency on September 28, 2001. At the May 3rd meeting, it was agreed that a separate meeting would be held to discuss the revised draft report and to define a path for finalization of that document. The meeting was held on July 20th. A red line

version of Chapters 1 through 4 of the September 28, 2001 Agency draft containing comments and suggested revisions was submitted to the Agency on July 12th.

At the July 20th meeting, the Agency indicated its desire to proceed with the source control portion of the Area 1 remedy, if possible, and defer the groundwater portion of the remedy until a regional groundwater model for the Sauget area has been developed. It was agreed that regular working meetings will be held over the next few months to define the various elements of a source control remedy for Area 1 so that the EE/CA report can be finalized.

Based on the discussion at this meeting, the immediate source control issues that needed to be addressed were the following

- Whether leachate collection would be effective at the source areas;
- Evaluation of the potential risks posed by the migration of soil vapors into indoor air; and
- Documentation of the various investigations looking for principal threat material within the source areas.

A Technical Memorandum comparing the potential impacts to groundwater from leachate flux through the source areas with those from DNAPL dissolution was prepared and submitted to the Agency on August 29th. That memorandum concluded that the potential impact from leachate accounts for less than one percent of the major constituents in the shallow groundwater immediately downgradient of the source areas and will become even less if low permeability covers are placed on the disposal sites.

A second meeting was held on September 1, 2005. At that meeting, the following issues were discussed:

- The potential for soil vapors to migrate into enclosed indoor spaces in nearby buildings at concentrations that could be of concern to workers in those buildings. It was agreed that the potential for such impacts will be estimated using the Johnson and Ettinger model. The modeled vapor concentrations in indoor air will then be compared to risk based values to determine if additional investigations are required.
- The comparative flux analysis presented in the Technical Memorandum submitted to the Agency on September 29th was briefly discussed. The Agencies will review the document and provide comments.
- It was noted that the Human Health Risk Assessment performed on Dead Creek soils following excavation did not include an exposure scenario for resident children playing in the creek bottom soils. It was agreed that the risks associated with this exposure pathway will be estimated.
- It was agreed that an evaluation of the existing source characterization data on the individual disposal areas will be reviewed with a view to identifying any potential areas of principal threat materials in the sites.

- It was noted that the Agencies were still concerned about the possibility of cadmium leaching from the creek bottom soils to the groundwater at concentrations that could exceed the Illinois Class I groundwater standards. A sampling plan to investigate this possibility will be submitted to the Agencies for review and approval.
- The Agency presented a list of individual activities that are required to complete the EE/CA. The list is intended to be the basis for preparing a detailed straw-man timeline and it was agreed that that this draft document would be prepared and discussed at the next meeting.
- The suggested technical revisions to the EE/CA and RI/FS draft report were discussed in general terms. It was agreed that the Agency will respond to all of the suggested changes.

A follow up meeting was held on October 20th. The discussions at that meeting largely followed up on the topics identified at the September 1st meeting. Specifically, the following reports were submitted either immediately prior to, or at, the meeting:

- A Technical Memorandum (TM) summarizing the risks to a recreational child in Dead Creek. The TM concluded that the risks were well below any level of concern.

- A TM summarizing the results of the Johnson and Ettinger modeling of potential vapor intrusion into occupied buildings adjacent to the disposal sites. The modeling could not rule out theoretical vapor intrusion risks in two buildings. Therefore, additional soil gas sampling is proposed in the vicinity of these buildings.

- A TM containing the evaluation of the available source characterization data.

- A Sampling Plan for evaluating the potential for cadmium to leach from vadoze zone soils to groundwater. It was proposed that soil samples collected in accordance with the plan would be analyzed for pH and extractable cadmium using the TCLP procedure. Groundwater samples would only be collected at those locations where the cadmium concentration in the TCLP extract exceeded the TACO Tier 1 standard. It was noted that this procedure was consistent with the TACO regulations. The Agencies will review this proposal and comment on its acceptability.

- A drawing showing the utilities in the immediate vicinity of the disposal areas was distributed at the meeting. One water line passing through Site I will have to be relocated. The need to relocate others will be further evaluated by superimposing the limits of waste placement at each site on the utility drawing to confirm that the utilities are outside of the edges of waste.

In addition to these submissions, Agency comments on the following submissions were also discussed:

- The Mass Flux TM submitted at the September 1st meeting. It was agreed that the mass flux from benzene in the waste would be estimated and that the flux calculations would be redone to include the use of site specific hydraulic conductivity values derived from slug tests. As well, a sensitivity analysis would be performed with the upper bound being the flux derived from considering the entire disposal area as the source.

- The proposed changes to the September 2001 draft version of the EE/CA and RI/FS report. It was agreed that the combined report would be split into two separate documents - one dealing with the EE/CA and the other dealing with the RI/FS. Technical revisions will be discussed at the next meeting, which was tentatively scheduled for January 4th or 5th. (This meeting was subsequently rescheduled for January 11, 2006).

At the meeting, the Agency distributed a draft Activity Forecast showing a suggested timeline for activities necessary to complete both the EE/CA and RI/FS reports. It was agreed that this forecast will be reviewed and comments will be submitted to the Agency.

Subsequent to the meeting, comments on the TM summarizing the available source characterization data were received from the Agency on November 22nd. These comments are being reviewed and responses will be submitted during the next reporting period. A revised version of the Mass Flux TM incorporating the changes and additional analyses agreed to at the October 20th meeting was submitted to the Agency on November 18th.

Attachments

There are no Technical Memoranda or data submitted with this report.

Work Scheduled for Next Reporting Period

- Continue additional DNAPL investigations.

Submittal Status

The following reports and evaluations are scheduled to be submitted to the Agency prior to the next EE/CA meeting in January 2006:

- A Work Plan for an investigation to evaluate vapor intrusion into buildings adjacent to Sites I and G. The timing of this submission is dependent on receipt of Agency comments on the TM submitted at the October 20th meeting.
- Additional evaluation of potential areas of principal threat materials in the disposal sites, once comments on the TM submitted at the October 20th meeting are received from the Agency.

- Revised utility drawings showing the limits of waste placement in the various disposal areas.
- Comments on the Activity Forecast prepared by the Agency..